

Center for Analysis Systems and Applications

Developing next-generation analysis capabilities

CASA

Status Dashboard:

A Testbed Monitoring System

China Wang, The University of Arizona

Project Mentor: Kuan Chen, 5542

Problem Statement:

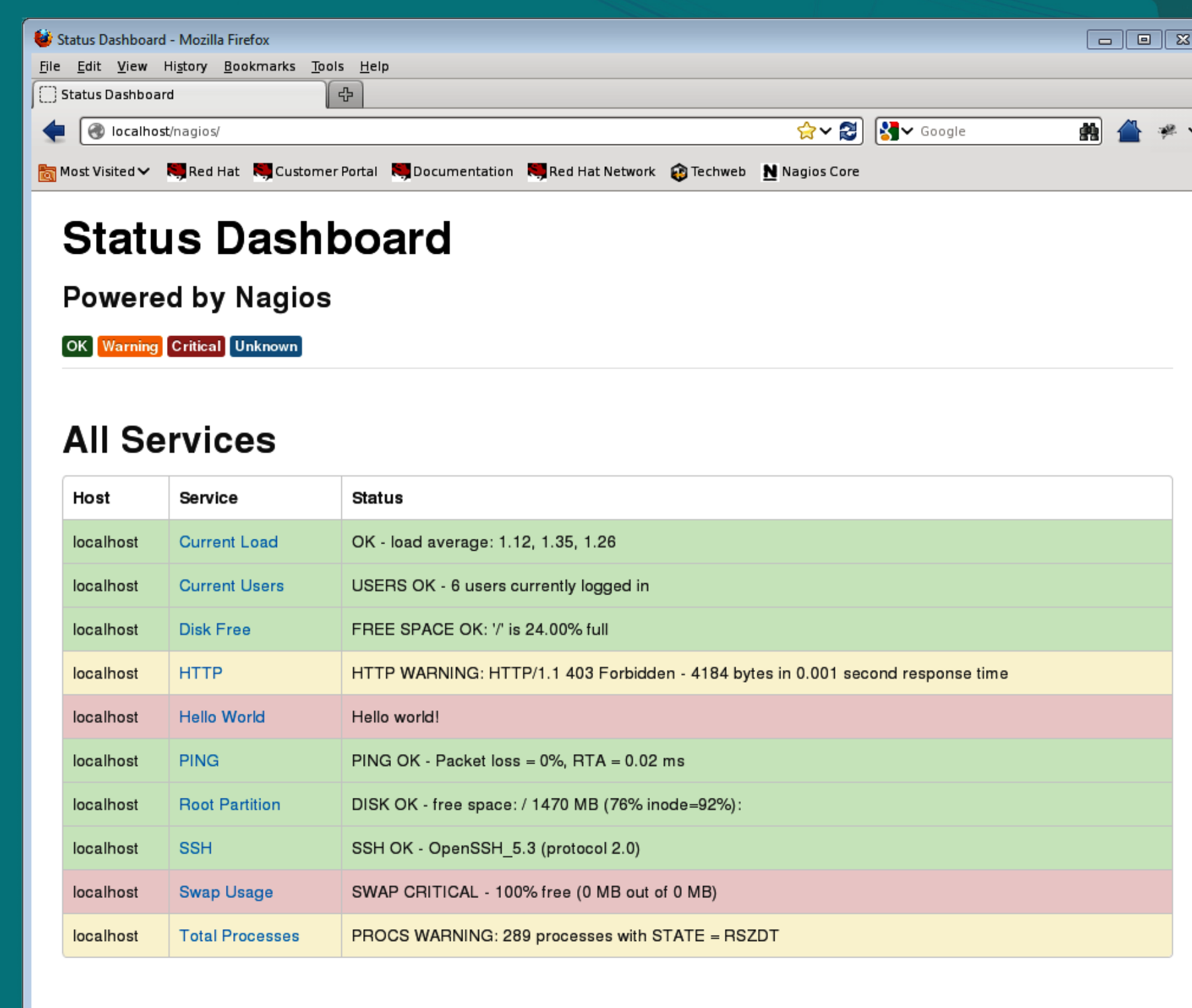
Many of the projects here at Sandia have complex testbeds that consist of various software, hardware, and networking components. Because status information must be queried from different sources depending on the type of component, it can be difficult to quickly determine if everything is working as expected or if something has failed.

Objective:

Deploy a monitoring system and create a dashboard with visibility into an environment's core applications and hardware, similar to Google's Apps Status Dashboard.

Approach:

- Install an open source monitoring system such as Nagios or Ganglia.
- Integrate the system with a testbed environment and configure it with the components whose statuses need to be queried.
- Design and develop a user interface suitable for user needs.



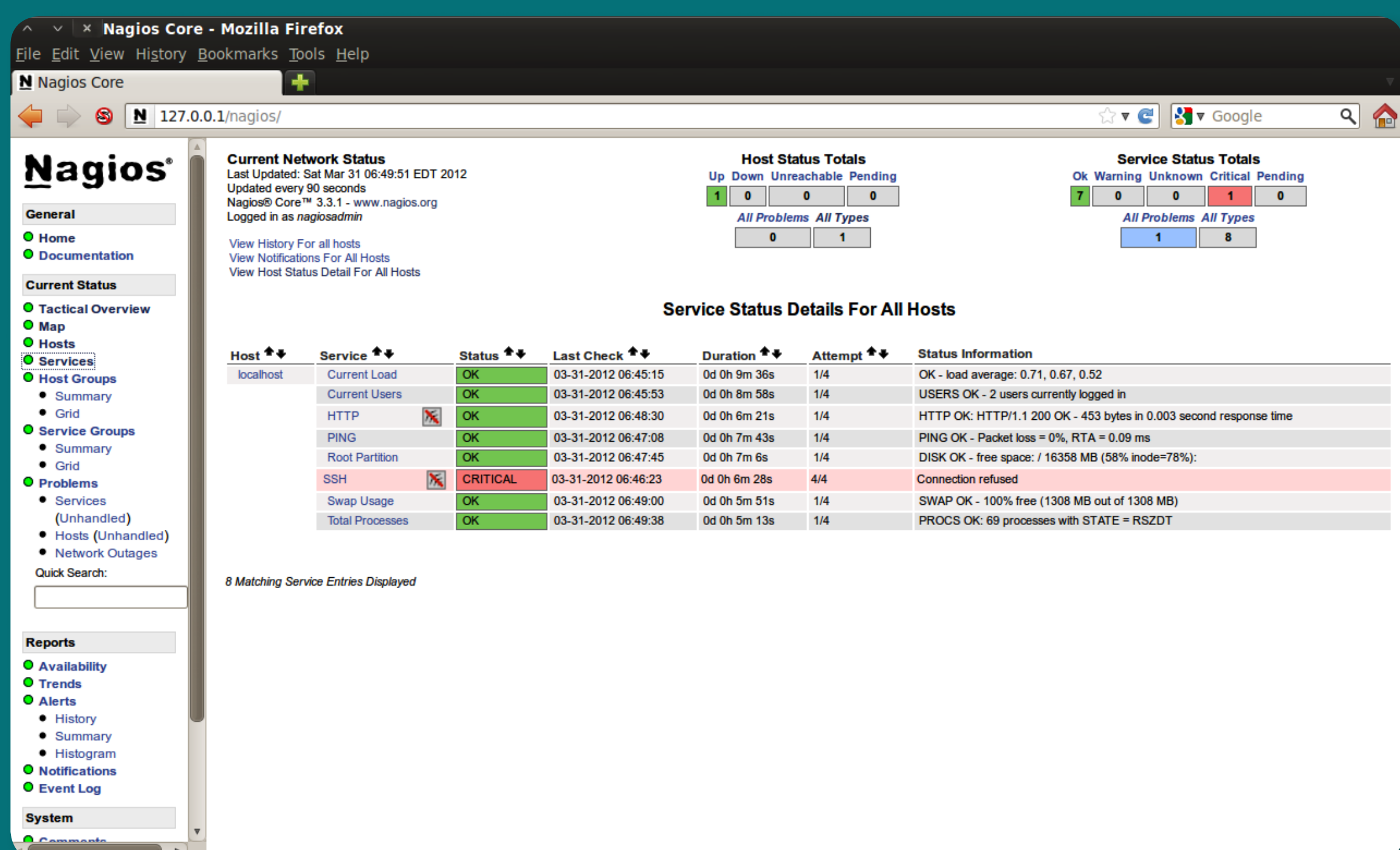
Modified web interface

Results:

- Nagios was chosen due to its flexibility and extensibility. Users can write plugins and configure them with Nagios to monitor virtually any testbed component.
- A sample plugin was written in Python to parse the results of a command line tool. The plugin returns an exit code for Nagios to interpret.
- The web interface included with Nagios was completely revamped to simplify and streamline the data displayed. It was written using an XML parser, PHP, HTML, CSS, and Bootstrap, a front-end framework. The web interface now resembles Google's Apps Status Dashboard and is easier for users to view.

Impact and Benefits:

The Status Dashboard monitoring system gives users a quick overview of testbed components, thus saving time and effort. Furthermore, due to its customizability, it can be deployed across different environments and projects.



Default web interface